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January 1940

Test 343: International TracTractor Model TD-14 (Wide Tread)

Tractor Museum

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3 pages-page 1

UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 343

Dates of test: May 6 to May 31, 1940.

Name and model of tractor: INTERNATIONAL TRACTRACTOR (Wide Tread) TD-14

Manufacturer: International Harvester Company, Chicago, Illinois.

Manufacturer's rating: NOT RATED.

B E L T H O R S E P O W E R T E S T S

H. P.	Crank shaft speed R.P.M	Fuel Consumption			Water used gal. per hr.	Temp. Deg. F.		Barometer Inches of Mercury
		Gal. per hr.	H. P. hr. per gal.	Lb. per H. P. hr.		Cool- ing med.	Air	

TESTS B AND C - 100% MAXIMUM LOAD - TWO HOURS

61.56	1350	3.918	15.71	0.444	0.000	194	70	29.035
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*TEST D - ONE HOUR

54.61	1350	3.501	15.60	0.448	0.000	192	75	29.025
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TEST E - VARYING LOAD - TWO HOURS (20 minute runs; last line average)

54.55	1350	3.499	15.59	0.448	--	193	76	--
1.16	1434	1.079	1.08	6.491	--	192	76	--
28.30	1398	2.252	12.57	0.555	--	195	76	--
60.27	1326	3.821	15.77	0.443	--	191	77	--
14.31	1406	1.668	8.58	0.813	--	190	76	--
41.38	1360	2.815	14.70	0.475	--	193	77	--
33.33	1379	2.522	13.22	0.528	0.000	192	76	29.030

D R A W B A R H O R S E P O W E R T E S T S

H. P.	Draw bar pull Pounds	Speed miles per hour	Crank shaft speed R.P.M.	Slip on drive wheels %	Fuel Consumption			Water used gal. per hr.	Temp. Deg. F.		Barometer Inches of Mercury
					Gal. per hr.	H.P. hr. per gal.	Lb. per H.P. hr.		Cool- ing med.	Air	

TESTS F AND G - 100% MAXIMUM LOAD

51.43	13426	1.44	1349	7.18	-----	Not Recorded	-----	187	82	28.910
51.82	9645	2.01	1351	6.58	-----	"	"	190	70	28.875
51.71	7919	2.45	1349	6.07	-----	"	"	190	68	28.840
51.28	5683	3.38	1350	4.85	-----	"	"	189	72	28.850
48.21	3824	4.73	1350	4.49	-----	"	"	191	72	28.850
44.67	2925	5.73	1350	4.45	-----	"	"	191	74	28.855

*TEST H - TEN HOURS - Third - GEAR

40.81	6178	2.48	1351	5.16	3.106	13.14	0.531	0.047	190	74	29.025
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*Formerly called RATED LOAD; see REMARKS 4, page 3.

3 pages-page 2

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FUEL, OIL, AND TIME

Fuel Commercial diesel fuel Weight per gallon 6.98 pounds

Oil: S.A.E. No. 30 To motor 4.213 gal. Drained from motor 3.039 gal.

Total time motor was operated 51 hours

BRIEF SPECIFICATIONS

Advertised speeds, miles per hour: First 1-1/2 Second 2 Third 2-1/2

Fourth 3-3/8 Fifth 4-3/4 Sixth 5-3/4 Reverse 1-1/2 - 3-3/8

Belt pulley: Diam. 12-1/4" Face 11" R.P.M. 844 Belt Speed 2706 f.p.m.

Clutch: Make Rockford Type Single plate, dry disc Operated by hand

Seat Upholstered

Total weight as tested (with operator) 17,595 pounds

MOTOR

Make Own Serial No. TDFM 517 Type 4 cylinder, vertical diesel

Head I Mounting Crankshaft lengthwise Lubrication Pressure

Bore and stroke 4-3/4" x 6-1/2" Rated R.P.M. 1350

Port diameter valves: Inlet 1.780" Exhaust 1.530"

Magneto: (For starting only) Make Own Model H-4

Carburetor: (For starting only) Make Own Model F Size 3/4"

Governor: Make Bosch Type Variable speed, centrifugal

Fuel Injection System: Make Bosch Serial No. 52797 Model APE4A 90N320 S94

Air Cleaner: Make Donaldson Type Oil-washed wire-screen filter

Oil Filter: Make Motor Improvements Inc. Type Double unit partial flow,

with replaceable bakelite impregnated paper element

Cooling medium temperature control: Bishop and Babcock thermostat and Pines

radiator shutters

CHASSIS

Type Tracklayer Serial No. 743 Drive Enclosed gear

Tread width 74" (wide tread) Measured length of track 21.0177'

Cleats: Type Integral with shoes No. per track 36

Size 2-1/4" high x 20" long (square corners)

3 pages-page 3

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REPAIRS AND ADJUSTMENTS

No repairs or adjustments.

REMARKS

1. All results shown on page 1 of this report were determined from observed data and without allowances, additions, or deductions. Tests B and F were made with fuel pumps set to develop approximately 61.5 observed maximum belt horsepower and data from these tests were used in determining the horsepower to be developed in tests D and H, respectively. Tests C, D, E, G, and H were made with the same setting.
2. Observed maximum horsepower (tests F and B)

<u>DRAWBAR</u>	<u>BELT</u>
51.71	61.56
3. Sea level (calculated) maximum horsepower
(based on 60° F. and 29.92" Hg.)

54.04	64.02
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4. Seventy-five per cent of calculated maximum drawbar horsepower and eighty-five per cent of calculated maximum belt horsepower (formerly A.S.A.E. and S.A.E. ratings)

40.53	54.42
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We, the undersigned, certify that the above is a true and correct report of official tractor test No. 343.

Carlton L. Zink
Engineer-in-charge

E. E. Brackett

C. W. Smith

L. W. Hurlbut
Board of Tractor Test Engineers